



GIS 101: Metadata Then and Now

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Agenda

GIS 101: Metadata Then and Now

Evolution of metadata in ArcGIS

Metadata challenges

Metadata today

Metadata and AI

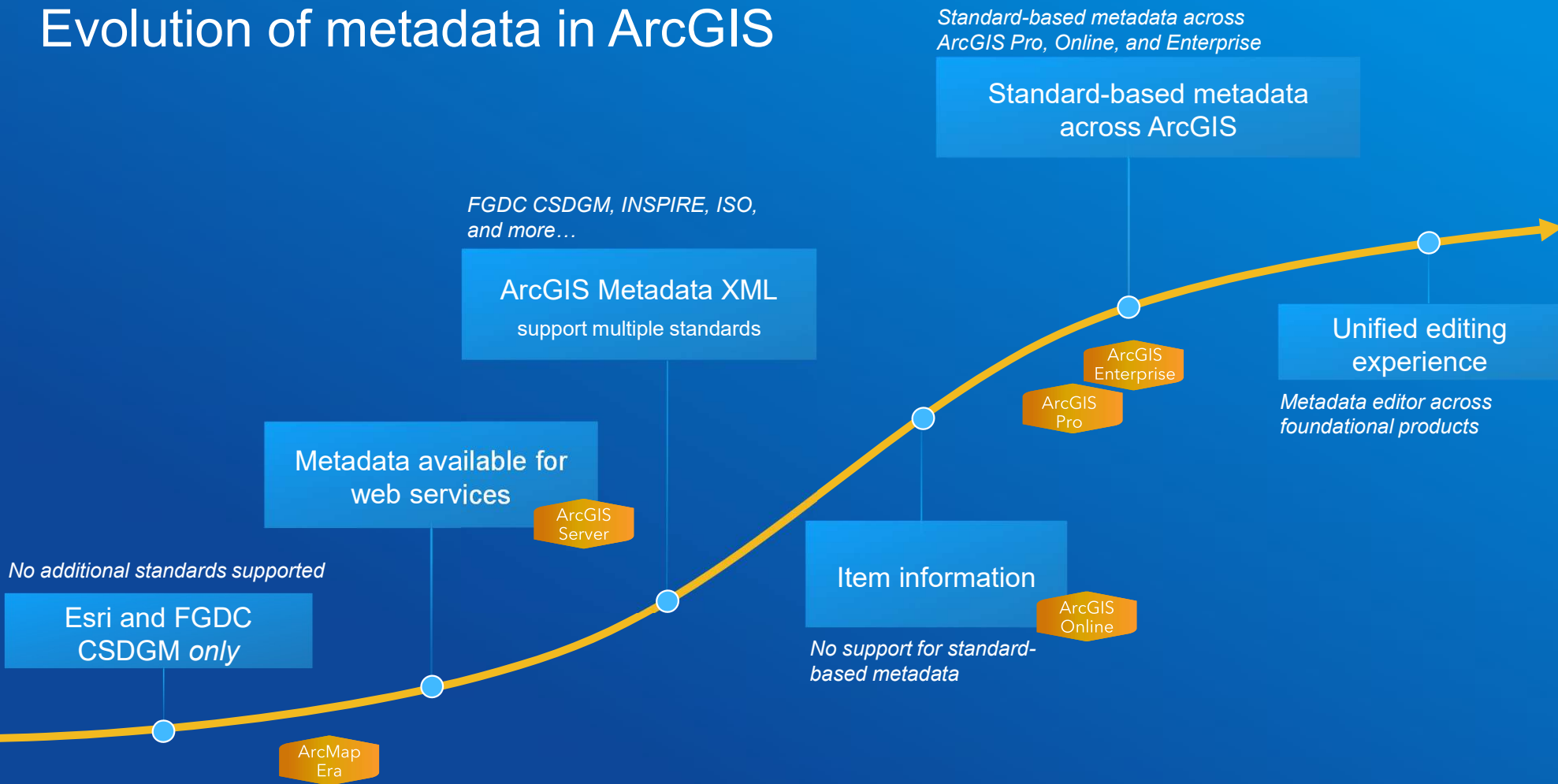
Looking ahead



Metadata Then and Now

Jill Saligoe-Simmel, Ph.D.

Evolution of metadata in ArcGIS



Metadata challenges

Then and now..



ArcGIS: Metadata today

Unified editing experience

A consistent editing experience across ArcGIS Pro, Online, Enterprise enhancing confidence and completion.

Metadata flow across ecosystem

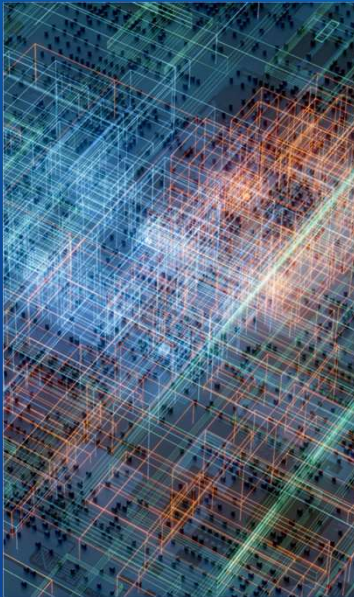
Metadata stays coupled with the data as it moves across workflows in ArcGIS and beyond.

Metadata consistency

Working toward 'populate once, use everywhere'



...and then AI happened: Why metadata suddenly matters more for *everyone*.



AI expands the data audience

AI increases geospatial data users beyond humans, including assistants and agents interpreting datasets.

Metadata provides essential context

Metadata offers definitions and constraints that enable AI to infer accurate meanings and avoid misinterpretations.

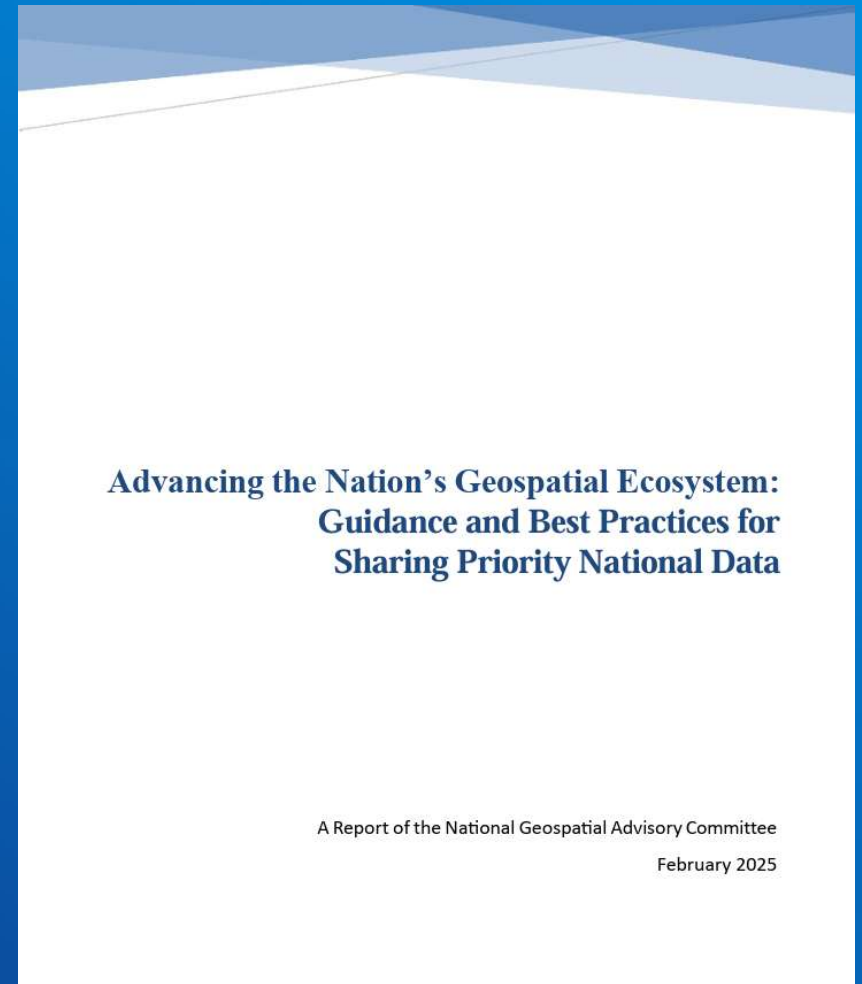
Risks of poor metadata now

Inadequate metadata leads to AI errors and hallucinations that can propagate widely.

Priority metadata elements

Discovery, reuse, AI readiness

- **Title**
- **Summary**
- Thumbnail
- **Description**
- **Tags**
- Categories
- Terms of Use
- Acknowledgements
- **Extent**
- **Attributes (Fields)**
- Status



*From the National Geospatial Advisory Committee
February 2025*

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- Title
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 - License constraint
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Table 1. An example of priority metadata elements to optimize data for discovery, reuse, and AI readiness, regardless of the specific metadata standard used.

Metadata element	Guidance	Best practice
Title	Optimize titles for discovery and AI readiness	Use concise, descriptive, and distinct titles. Follow the pattern: What (topic) of Where (location), and When (time period), if relevant.
Summary	Engage potential users and optimize for discovery	Provide a brief, engaging summary of the purpose and use cases for the content that will appear in galleries and search results, reaching broad audiences. Include keywords different from words in your title to increase findability and search engine optimization. Aim for between 120 and 250 characters and an 8th grade reading level. Consider using a readability checker to assess reading ease.
Thumbnail	Capture attention	Add appealing preview images to engage users and help them understand content at a glance. Provide a preview image (600 x 400 or larger).
Description	Make it understood	Describe what your content is about. For example, a good description conveys "what" the data represents, "where" the data is located, "how" accurate it is, "when" it was collected, and "who" collected it.
Tags	Be specific	Provide at least three key-word tags using narrower terms than in the title or summary to use in galleries and search results and increase the findability of the resource. Include complete spellings and common acronyms.
Categories	Make it sortable	Provide at least one ISO theme key word to aid categorization, browsing, search, and discovery.
Terms of Use	Communicate license and constraints	Include an open data license for eligible datasets. As needed, include general use limitations, restrictions, and constraints. Describe any terms or conditions to help users understand how the content should or should not be used.
Acknowledgment	Give credit	Provide a concise name of the data source to display in digital map attribution. Organizational abbreviations are appropriate.
Extent	Locate the data	Provide the geographic extent of the dataset content for search using bounding box coordinates in WGS84.
Attributes	Make it useful	Provide data attribute field display names and attribute field descriptions to ensure data are well-understood.
Status	Manage change	Include the lifecycle status of the dataset as it changes, for example, when deprecating content.

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Introducing Dublin Core+

The new default metadata style across ArcGIS



Priority metadata elements without the complexities of other standards.



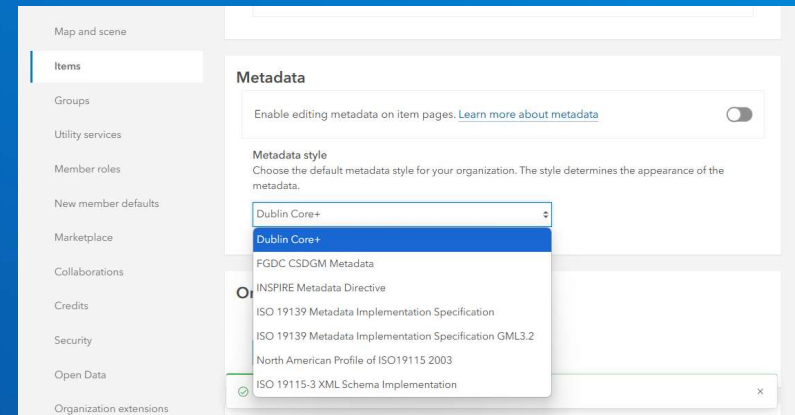
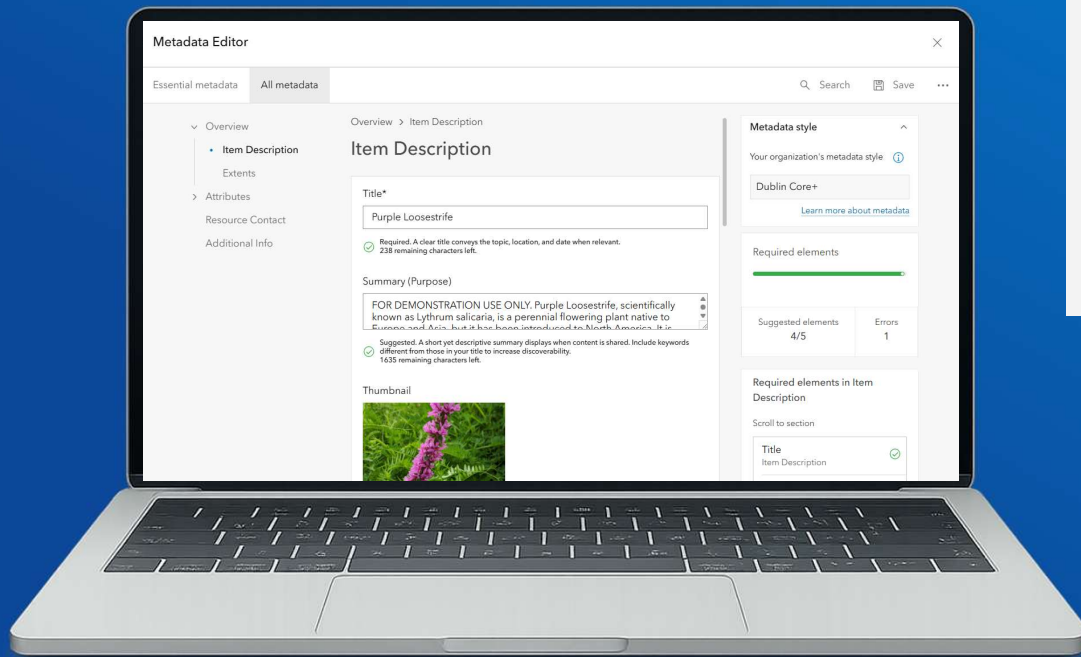
Effectively search and discover content in ArcGIS.



Prepare your content and data for AI.

Dublin Core+

Default metadata style for discovery, sharing, and AI readiness

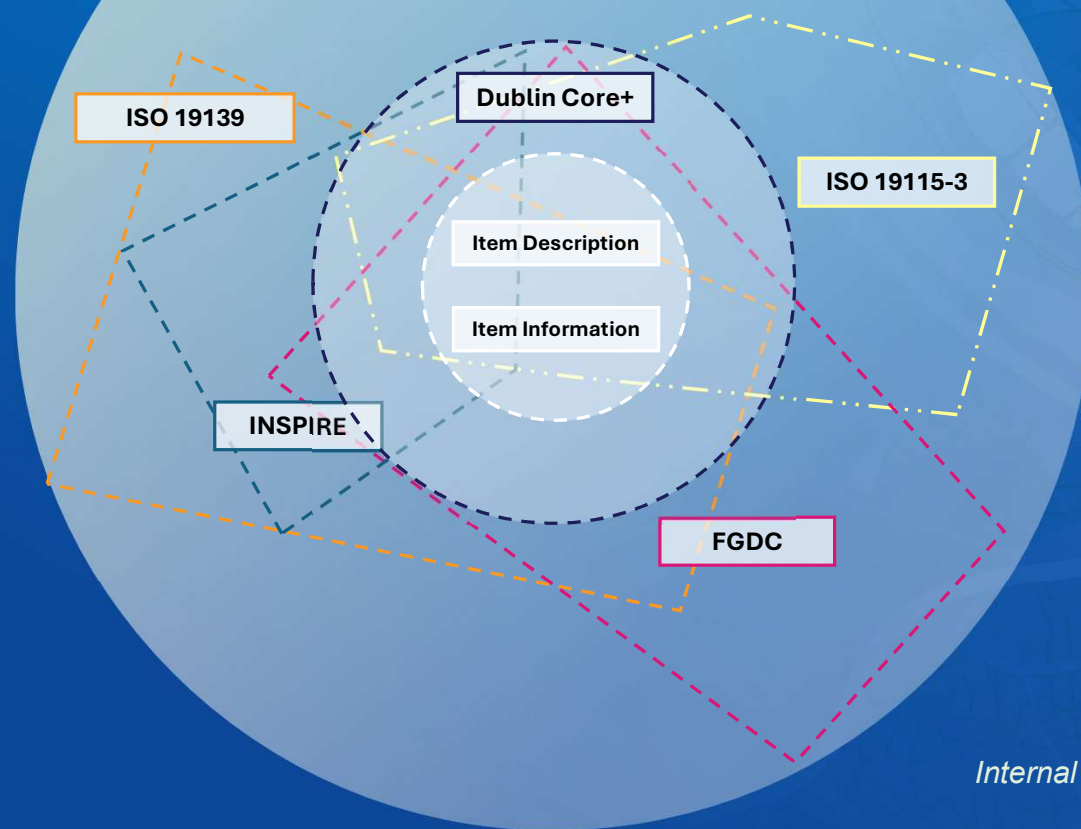


ArcGIS Online
ArcGIS Enterprise 12.0
ArcGIS Pro 3.7

Intuitive
Consistent
Delightful

ArcGIS Metadata XML

comprehensive superset of metadata elements



Internal storage format for standards-based metadata in ArcGIS.

Item Details assistant (beta)

Provides high-quality metadata suggestions

- title, summary, description, tags
- attribute field information (display name, description, value type)

Enhances metadata to make data *ready to use*

- Improves overall understanding
- Optimizes search and discovery
- Is ready for AI applications

Available in ArcGIS Online and Enterprise 12.0 (beta)

Review suggested item information

Beta

AI generated content may be inaccurate.
[Learn more](#)

Title

Minneapolis Greenways Network Trails

Summary

Detailed geographic data on Minneapolis greenways trail segments, supporting recreational and transportation planning for walking and cycling.

Description

AI A A B I U Source

Overview

This feature service provides comprehensive geographic information on the greenways network within Minneapolis. It focuses on dedicated trails designed for recreational and transportation activities such as walking, cycling, and other non-motorised travel. The data aims to support urban connectivity, outdoor leisure, and sustainable movement strategies.

Feature Layers

Tags

Minneapolis × greenways × urban recreation × trail network × bike paths ×
walking trails × outdoor activities × non-motorised transport ×

Cancel

Save

Looking ahead

Where do you see the future?

Reimagining metadata

- Streamlined metadata population and processes with **minimal effort**
- Tightly coupled with data, **powering geospatial ecosystems**

Active metadata

- Driving **insights** and **suggestions** from data
- Adapting to change effectively

Smarter search and discovery

- Supporting **AI-readiness**
- Expanding reach and **system connectivity**
- **Linking** data, information, models, and people

Strategic alignment with data and goals

- **Effortless access** to essential information to make better decisions
- Enhancing **data strategy alignment**

Connect with us!

Let's make metadata delightful and more impactful –together!

- Esri Community – [Metadata, Catalogs, and Search](#)
- Join the Item Details assistant Early Adopter Community!
- Email us – metadata@esri.com
- Take the survey (*QR code on the slide*)





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